

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 02 MAY 2006

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Applicant's or agent's file reference 030245WO		FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/US04/04787		International filing date (day/month/year) 18 February 2004 (18.02.2004)		Priority date (day/month/year) 18 February 2003 (18.02.2003)
International Patent Classification (IPC) or national classification and IPC IPC: 455/442, 439,067.11 USPC: H04Q 7/20				
Applicant QUALCOMM INCORPORATED				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>1</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of ___ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input checked="" type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 16 September 2004 (16.09.2004)		Date of completion of this report 19 April 2006 (19.04.2006)		
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer Kenneth Wieder Telephone No. 571-272-2966 <i>Rugenio Zogan</i>		

Box No. I Basis of the report

1. With regard to the language, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into English, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4(a))
- ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ the international application as originally filed/furnished
- ☒ the description:
pages 1-15 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____
- ☒ the claims:
pages 16-20 as originally filed/furnished
pages* NONE as amended (together with any statement) under Article 19
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____
- ☒ the drawings:
pages 1-6 as originally filed/furnished
pages* NONE received by this Authority on _____
pages* NONE received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US04/04787**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)

Claims 2-4, 13-15, 19-21, 31-33 YESClaims 1, 5-12, 16-18, 22-30 NO

Inventive Step (IS)

Claims 4, 15, 19-21, 33 YESClaims 1-3, 5-14, 16-18, 22-32 NO

Industrial Applicability (IA)

Claims 1-33 YESClaims NONE NO2. Citations and Explanations (Rule 70.7)
Please See Continuation Sheet

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US04/04787

Box No. VI Certain documents cited

1. Certain published documents (Rule 70.10)

Application No

Publication Date

Filing Date

Priority date (valid claim)

Patent No.(day/month/year)(day/month/year)(day/month/year)

US 2003/0129981

10 July 2003 (10.07.2003)

27 December 2002 (27.12.2002)

None

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure

Date of non-written disclosure

(day/month/year)Date of written disclosure
referring to non-written disclosure(day/month/year)

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

V. 2. Citations and Explanations:

Claims 1, 5-12, 16-18 and 22-30 lack novelty under PCT Article 33(2) as being anticipated by Jung (US 6,049,716).

Regarding claim 1, Jung teaches a wireless communication system (fig.2, col. 3, lines 11-15) comprising: a network (fig.1-2 col. 3, lines 11-15); a first base station coupled to the network (fig.1-2, col. 2, lines 3-15); and a mobile station coupled to the base station via a wireless communication link (fig.1-2, col. 2, lines 3-15, mobile station transmits the strength measurement message (PSMM) signal to base station); wherein the network is configured to direct the mobile station to enter or leave soft handoff status (fig.1-3, col. 3, lines 11-67); and wherein the mobile station is configured to modify a set of transmission parameters in response to the network directing the mobile station to enter or leave soft handoff (fig.1-3, col. 2, line 3 to col. 3, line 67).

Regarding claim 5, Jung teaches a wireless communication system as recited in claim 1, wherein the mobile station is configured to measure a pilot signal strength for each of one or more base stations (fig.1-3, 6, col. 2, line 3 to col. 3, line 67) wherein the one or more base stations include the first base station (fig.1-3, 6) and to periodically transmit one or more pilot strength measurement messages to the network (fig.1-3, 6, col. 2, line 3 to col. 3, line 67).

Regarding claim 6, Jung teaches a wireless communication system as recited in claim 5, wherein the network is configured to identify a change in a number of base stations in an active set for the mobile station based on the pilot strength measurement messages (fig.1-3, 6, col. 1, line 47 to col.2, line 48) and to direct the mobile station to enter or leave soft handoff based on the change in the number of base stations in the active set (fig.1-3, 6, col. 1, line 47 to col.2, line 48).

Regarding claim 7, Jung teaches a wireless communication system as recited in claim 6, wherein the network is configured to direct the mobile station to enter or leave soft handoff by sending a handoff direction message (HDM) to the mobile station (fig.1-3, 6, col. 1, lines 36-65, col. 5, lines 35-67).

Regarding claim 8, Jung teaches a wireless communication system as recited in claim 7, wherein the mobile station is configured to modify the transmission parameter in response to receiving the HDM from the network (fig.1-3, 6, col.2, line 3 to col. 3, line 67).

Regarding claim 9, Jung teaches a wireless communication system as recited in claim 8, wherein the mobile station is configured to

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transmit a handoff completion; message to the network after receiving the HDM (fig.1-3, 6, 01.2, line 3 to col. 3, line 67).

Regarding claim 10, Jung teaches a mobile station configured to operate in a wireless communication system (fig.1-3) comprising: a processing subsystem (fig.1-3, col. 2, line 42 to col. 3, line 3); and a transceiver subsystem (fig.1-3, col. 3, line 42 to col. 3, line 3); wherein the processing subsystem is configured to set a transmission parameter for the transceiver subsystem in response to detecting that the mobile station is entering or leaving soft handoff (fig.1-3, col. 2, line 3 to col. 3, line 67).

Regarding claim 11, Jung teaches a mobile station as recited in claim 10, wherein the processing subsystem is configured to detect that the mobile station is entering or leaving soft handoff based upon a received handoff direction message (HDM) (fig.1-3, 6, col. 2, line 3 to col. 3, line 67).

Regarding claim 12, Jung teaches a mobile station as recited in claim 11, wherein the processing subsystem is configured to set the transmission parameter to a first value if the HDM directs the mobile station to enter soft handoff (fig.1-3, 6, col. 2, line 3 to col. 3, line 67), and to set the transmission parameter to a second value if the HDM directs the mobile station to leave soft handoff (fig. 1-4, 6, col. 4, line 48 to col. 5, line 12).

Regarding claim 16, Jung teaches a mobile station as recited in claim 11, further comprising measuring a pilot signal strength for each of one or more base stations and periodically transmitting one or more pilot strength measurement messages to a network connected to the base stations (fig.1-3, 6, col. 2, line 3 to col.3, line 67).

Regarding claim 17, Jung teaches a mobile station as recited in claim 16, further comprising transmitting a handoff completion message to the network after receiving the HDM (fig.1-3, 6, col. 1, lines 36-65, col. 5, lines 35-67).

Regarding claim 18, Jung teaches a method implemented in a wireless communication system (fig.1-3) comprising: detecting a mobile station entering or leaving soft handoff (fig.1-3, abstract, col. 1, lines 36-65); and modifying a transmission parameter for the mobile station in response to detecting the mobile station entering or leaving soft handoff (fig.1-3, col. 1, line 36 to col. 2, line 19).

Regarding claim 22, Jung teaches a method as recited in claim 18, further comprising the mobile station measuring a pilot signal strength for each of one or more base stations and periodically transmitting one or more pilot strength measurement messages to a network (fig. 1-4, 6, col. 2, line 3 to col. 3, line 67, col. 4, line 48 to col. 5, line 12).

Regarding claim 23, Jung teaches a method as recited in claim 22, wherein detecting the mobile station entering or leaving soft handoff comprises identifying a change in a number of base stations in an active set for the mobile station based on the pilot strength measurement messages (fig.1-4, 6, col. 1, line 47 to col. 2, line 48, col. 4, line 48 to col. 5, line 12).

Regarding claim 24, Jung teaches a method as recited in claim 23, further comprising sending a handoff direction message (HDM) from the network to the mobile station in response to detecting the change in a number of base stations in an active set (fig. 1-4, 6, col. 2, line 3 to col. 3, line 67, col. 4, line 48 to col. 5, line 12).

Regarding claim 25, Jung teaches a method as recited in claim 24, wherein modifying the transmission parameter for the mobile station is performed in response to receiving the HDM from the network (fig. 1-4, 6, col. 2, line 3 to col. 3, line 67, col. 4, line 48 to col. 5, line 12).

Regarding claim 26, Jung teaches a method as recited in claim 25, further comprising transmitting a handoff completion message from the mobile station to the network after receiving the HDM (fig.1-3, 6, col. 1, lines 36-65, col. 5, lines 35-67).

Regarding claim 27, Jung teaches a method implemented in a mobile station (fig.1-3) comprising: detecting that the mobile station is entering or leaving soft handoff (fig.1-3, abstract, col. 1, lines 36-65); if the mobile station is entering soft handoff, setting a transmission parameter to a first value (fig.1-4, col. 1, line 36 to col. 2, line 19, col. 3, line 49 to col. 4, line 17); and if the mobile station is leaving soft handoff, setting a transmission parameter to a second value (fig.1-4, col. 1, line 36 to col. 2, line 19, col. 3, line 49 to col. 4, line 17).

Regarding claim 28, Jung teaches a method as recited in claim 27, wherein detecting that the mobile station is entering or leaving soft handoff comprises receiving a handoff direction message (HDM) from the network (fig.1-3, 6, col. 1, lines 36-65, col. 5, lines 35-67).

Regarding claim 29, Jung teaches a method as recited in claim 27, further comprising measuring a pilot signal strength for each of one or more base stations and periodically transmitting one or more pilot strength measurement messages to a first one of the base stations (fig.1-3, 6, col. 6, line 61 to col. 7, line 38).

Regarding claim 30, Jung teaches a method as recited in claim 29, further comprising transmitting a handoff completion message to the first one of the base stations after receiving the HDM (fig. 1-3, 6, col. 6, line 61 to col. 7, line 38).

Claims 2, 3, 13, 14, 31 and 43 lack an inventive step under PCT Article 33(3) as being obvious over Jung, in view of Hunzinger et al. (US 2002/0172192).

Regarding claim 2, Jung teaches a wireless communication system as recited in claim 1, Jung fails to specifically disclose the transmission parameter comprises a frame size, wherein if the mobile station is directed to enter soft handoff, the frame size is set to a first size and wherein if the mobile station is directed to leave soft handoff, the frame size is set to a second size. However, Hunzinger teaches the transmission parameter comprises a frame size (paragraph 0018, 0058-0059), wherein if the mobile station is directed to enter soft handoff, the frame size is set to a first size (paragraph 0018, 0058-0059, 0109) and wherein if the mobile station is directed to leave soft handoff, the frame size is set to a second size (paragraph 0018, 0058-0059, 0109). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the transmission parameter comprises a frame size, wherein if the mobile station is directed to enter soft handoff, the frame size is set to a first size and wherein if the mobile station is directed to leave soft handoff the frame size is set to a second size as taught by Hunzinger with Jung teaching in order to provide coverage over larger areas to meet consumer demand.

Regarding claim 3, Jung and Hunzinger further teaches a wireless communication system as recited in claim 2, wherein the first size is greater than the second size (see Jung, col. 1, line 55 to col. 2, line 19, see Hunzinger, paragraph 0018, 0058-0059, 0109).

Regarding claim 13, Jung teaches a mobile station as recited in claim 12, Jung fails to specifically disclose the transmission parameter comprises frame size. However, Hunzinger teaches the transmission parameter comprises a frame size (paragraph 0018, 0058-

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0059). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the transmission parameter comprises a frame size as taught by Hunzinger with Jung teaching in order to provide coverage over larger areas to meet consumer demand.

Regarding claim 14, Jung and Hunzinger further teaches a mobile station as recited in claim 13, wherein the first size is greater than the second size (see Jung, col. 1, line 55 to col. 2, line 19, see Hunzinger, paragraph 0018, 0058-0059, 0109).

Regarding claim 31, Jung teaches method as recited in claim 27, Jung fails to specifically disclose the transmission parameter comprises frame size. However, Hunzinger teaches the transmission parameter comprises a frame size (paragraph 0018, 0058-0059). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the transmission parameter comprises a frame size as taught by Hunzinger with Jung teaching in order to provide coverage over larger areas to meet consumer demand.

Regarding claim 32, Jung and Hunzinger further teaches a method as recited in claim 31, wherein the first value is greater than the second value.

Claims 4, 15, 19-21 and 33 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the claimed subject matter.

Claims 1-33 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----

US 6,049,716 A (JUNG) 11 April 2000, fig. 1-2; col. 3, lines 11-15; col. 2, lines 3-15.

US 2002/0172192 A1 (HUNZINGER et al.) 21 November 2002, para. 0018, 0058-0059, 0109.